

(B1) Reduce Use and Generation of Toxics Through Development of Safer Alternatives

- Conduct Alternatives Assessments – Ecology will lead a collaborative process with stakeholders to define elements of and finalize a method for conducting alternative assessments, using existing models as a starting point for discussion. Based on the results of the Puget Sound Toxics Loading Study and Synthesis Report, we will identify chemicals or products that are good candidates for scientifically defensible assessment and work with partners (sub-awardees) to conduct alternatives assessments. We will support safer alternatives research, promote the use of safer alternatives, and create incentives to encourage the development of safer alternatives. This aligns with statements in Goal 4 of Draft FY 2011-2015 EPA Strategic Plan, “accelerating work to identify safer alternatives,” and “evaluating chemicals in use.” It also aligns with items C.1.1.2 and C.1.1.4 in the Action Agenda, “promote safer chemical alternatives,” “advocate for safer chemical substitutions,” and “development and use of safer chemical alternatives and products”. (Round 1: \$329,000, Round 2: \$300,000, Rounds 3-6: \$1,225,000, Total: \$1,854,000) **(Mike/Lon/Jean)**

(B2) Build on Programs to Prevent PBTs (Persistent Bioaccumulative Toxics) and Other Chemicals of Concern from Entering Puget Sound – We will continue and enhance current efforts to phase out the use of PBTs by accelerating Ecology’s work to complete Chemical Action Plans. We will use a sub-award process to develop innovative methods to reduce the use of PBTs and other chemicals of concern (endocrine disruptors, metals, pesticides, diesel particulates, and emerging contaminants such as pharmaceuticals, flame retardants, Page 17 of 23

plasticizers, personal care products, and nanomaterials). Actions may include implementing Washington's Beyond Waste Plan (Action Agenda item C.1.1.6), Ecology's PBT Strategy (Action Agenda near term action C.1.2), and implementing or enhancing air management plans (Action Agenda near term action C.1.2.6). (Round 1: \$450,000, Round 2: \$820,000, Rounds 3-6: \$2,836,876, Total: \$4,106,876) **(Lon/Mike/Jean)**

(B3) Provide Education and Technical Assistance – We will work with PSP, ECO-Net, and LIOs to implement the regional public engagement work plan being developed by PSP's education and outreach team. This team will play a lead role in coordinating LIO and LO delivery of regional and watershed messages. Understanding how LIOs can tap into and leverage existing ECO-Net capacity will be a key part of this effort. The ECB would inform and help implement the public education and outreach portion of the strategy in coordination with PSP's overall effort. This will include feedback on an integrated work plan to integrate the public awareness and engagement efforts of each LO with those of PSP's work. Our goals would include incorporating clear, consistent public health and environmental messaging about reducing toxic threats and how to control nutrients for businesses and the public. We will support programs to train professionals such as architects, landscapers, teachers, engineers and chemists and to engage volunteer citizen scientists to address toxic threats and promote green chemistry approaches. Action Agenda item C.1.1.1 specifically calls out education and technical assistance actions, "conduct focused business and citizen outreach aimed at controlling and reducing high priority chemicals, pharmaceuticals, and personal care products." And Action Agenda near term action C.1.1 states "conduct a focused outreach campaign for the public and businesses to reduce pollutants identified in toxic loading and other studies that are priority threats to Puget Sound". Round 1 funding will be used for a targeted educational work around agricultural issues, in coordination with, but beyond the current scope of work being conducted by the Puget Sound Partnership. (Round 1: \$150,000, Round 2: \$321,719, Rounds 3-6: \$1,055,000, Total: \$1,526,719) **(All)**

C. Management and Control Activities

(C1) Fund Activities to Prevent, Reduce, and Control the Sources of Nutrients – This proposal would develop and implement programs to address low dissolved oxygen concentrations and other nutrient-related impacts in Puget Sound. This area of investment would fund implementation projects beginning in 2011, with an emphasis on Hood Canal (lowest dissolved oxygen), Budd Inlet (low dissolved oxygen), Whidbey Basin (large agricultural sources of nitrogen), or other areas with known problems. These projects would not only address specific problem areas but they would evaluate their effectiveness for use throughout Puget Sound. Beyond Round 1 it would create a funding source for South Puget Sound to conduct TMDL (or other management plan) implementation and then move to the rest of Puget Sound. Funding can be used to reduce nitrogen loads from on-site septs, residential or agricultural fertilizer use, other agricultural sources of nitrogen, wastewater treatment plants, stormwater, or other human-caused source of nutrients. It can address marine or freshwater and nitrogen or phosphorus. All projects funded in this category must result in reduced nutrient loading. (Round 1: \$455,573, Round 2: \$2,766,719, Rounds 3-6: \$9,466,876, Total: \$12,689,168) Page 18 of 23) **(Ben and Karma)**

(C2) Continue to Upgrade and Invest in Innovative Treatment and Control

Technologies to Prevent, Reduce and Control the Release of Toxics and Nutrients – We will research technologies and strategies to prevent, reduce, or control the release of toxics to stormwater and other non-permitted sources. We will advance infrastructure upgrades and treatment technologies that will help control stormwater flow and improve water quality in accordance with Action Agenda item C.1.1.7, “continue to invest in technologies that reduce toxic pollutants.” We will continue the transition of the region to the LID stormwater management approach by introducing LID concepts during the municipal NPDES stormwater permit process. We seek partners to provide training and technical assistance on LID approaches. We will continue to identify and promote best management practices (Action Agenda near term action C.2.3). For nutrients, both permitted and non-permitted discharges will be addressed and technical assistance will be provided to entities in need. Ecology and others are currently evaluating nutrient removal technologies for municipal wastewater treatment plants. The effectiveness of non-proprietary technologies for removing nitrogen in septic systems needs to be evaluated. (Round 1: \$926,573, Round 2: \$550,000, Rounds 3-6: \$3,450,000, Total: \$4,926,573) **(Mike/Lon/Jean)**

Growing concerns of nitrogen loadings from on-site sewage systems to the Puget Sound has lead to the need for research efforts to evaluate alternative approaches to managing decentralized nitrogen treatment that are cost-effective, reliable, and low maintenance. An On-Site Sewage Nitrogen Removal Technologies study will evaluate two new innovative public domain technologies that have shown to be capable of removing total nitrogen greater than 80% from various wastewater sources in other areas of the country. The goal of the study is to examine the nitrogen removal rates of the technologies through performance monitoring under field conditions in the Puget Sound basin. The Washington State Department of Health would lead this \$600,000 study. The additional money allocated in Round 1 would be for toxics-related work. **(Ben and Karma)**

(C6) Evaluate Whether Water Quality Standards are being met for Toxics and

Nutrients in the Puget Sound Ecosystem – For nutrients, Ecology will use the ongoing studies to evaluate if the water quality standards are being met. Ecology will work with our partners and stakeholders in developing the TMDLs or other mechanisms as needed to improve water quality. For toxics human health criteria, the fish consumption part of toxics water quality standards need to be evaluated and updated. As part of Round 1 subawards, Ecology would like to provide funding to the Northwest Indian Fisheries Commission to work with federally recognized tribes in Washington, and tribes that have usual and accustomed lands in Washington, to develop a fish consumption rate that is acceptable to the tribes for development of water quality criteria for toxics. Many toxics issues in Puget Sound may be successfully addressed by funding Straight-to-Implementation projects for marine or freshwater. (Round 1: \$100,000, Round 2: \$800,000, Rounds 3-6: \$1,050,000, Total: \$1,950,000) **(Jean, Lon and Mike)**